Market Research and Marketing

INTRODUCTION

In the project design context, the market is the group of individuals and/or institutions willing and able to consume what is to be produced by the project. There are at least three dimensions in the design process: (1) knowledge of the market as derived from market research; (2) a method of informing and approaching potential consumers to make them aware of the nature of the project’s output and to stimulate their interest, a marketing strategy; and (3) a marketing plan, or system for implementing the marketing strategy.

Although some investment projects have been fortunate to find a ready market without much planning, ordinarily to proceed with implementation before dealing with these issues is a hazardous undertaking. In most cases, resolution of issues of market and marketing is prerequisite to any other design stage. It makes little sense to commence other design features such as the plant or organization before there is some assurance that what is to be produced will be sold. This is true for private and public sectors and for both revenue and nonrevenue projects.

An outgrowth of these activities are estimates of a sales plan, a production program including timing and quantities of production, and the appropriate production scale of the project, which have to be mutually consistent. These relationships are illustrated in Figure A4.1.

Market research is essentially the process of identifying and collecting information on potential consumers and supplies and of forecasting demand. The marketing strategy is the means of acquiring market share (percentage of targeted market demand to be served by the project) and penetration (rate of acquisition of planned market share). The marketing strategy and marketing system are the basis for predicting the sales program (quantities and prices) for market segments and selection of distribution channels, upon which decisions on production program and plant capacity are predicated. An organization and program or marketing campaign to carry out the marketing strategy is needed.

Although the process of Figure A4.1 appears as a step-by-step sequence, it will more likely be accomplished iteratively, with feedback between the stages of research, strategic development, and sales program. Market
dimensions and characteristics are necessary elements in the process of overall project design, with close coordination conducive to achieving schedule and cost objectives.

The project may be undertaken for strategic purposes, such as to strengthen market position or to secure future supplies of necessary resources. However, in the final analysis, consumers have to be the focal point, whether responding to business opportunities or providing a public service. Identifying the market, its characteristics, and how to promote and deliver project output to potential consumers is essential to a well-planned investment project and indispensable for determining all of its other design features.

**MARKET RESEARCH**

The fundamental purpose of market research is to identify potential consumers with sufficient purchasing power so that the project can be designed
to serve them. These consumers can be served either by the project or by competing enterprises, so knowledge of the industry, that is, alternative providers of project output, domestic and foreign, is necessary. This is the foundation for designing an approach to informing and attracting consumers—a marketing strategy and plan.

Some of the issues for which information is needed relate to the market as a whole and to segments of interest: What is currently sold? Why is it purchased, that is, what are the purchasing motives? Who are the buyers, purchasing decision makers, and persons participating in the decision? When is it purchased (one time, recurring, seasonal, cyclical)? How much is purchased and at what frequency? Where do the purchases occur?

Potential consumers (buyers and other users)—domestic and foreign—are at the center of all decisions relating to the project design, at all levels of the enterprise, and in all functional areas. Whether in the private or public sector, the project has to focus upon their problems, needs, and desires, and not merely on products or production. For profit-seeking enterprise, consumers of interest are those who constitute part of demand—with (1) the wish to consume project output, (2) ability to pay, and (3) willingness to pay. Target consumers of nonrevenue public service projects do not necessarily have the attributes (2) and (3). Consumer interest can be inherent (mandatory for comfort and survival, e.g., heating fuel), latent (contingent on consumer’s knowledge of availability, e.g., electric can opener), or subject to stimulation (consumer psychologically vulnerable, e.g., whitening toothpaste).

For the latter two types of consumer, subject to further information or influence, the main factor of interest is their manner of making decisions on what and how much to consume, how they choose between alternatives, and to what degree they can be influenced by factors in the external environment. Another matter of interest is how much information consumers have at hand and now is used in their consumption decisions.

Consumer behavior with respect to consumption is dependent upon the degree of socialization, in other words, how much the mores and consumption patterns of friends and family influence their decisions. Other factors are product acquisition practices, structure of needs, purchasing motives, purchasing processes and attitudes, and response to information.

Another factor, coming more and more into prominence, is the attitude toward social responsibility, namely, to what extent the product introduces environmental degradation and disposal problems.

Identification of the market and qualitative analysis of the market structure are fundamental to developing the marketing strategy. Significant relations between elements of the marketing system (see Figure A4.8) are relevant: structure of the industry (suppliers, types of enterprises, organization of the industry or branch), customer profiles, patterns of employment
and competition, and distribution channels. Market structure may vary among geographical regions.

**Domestic consumers** Human behavior is influenced by genetic and cultural factors. While it has been demonstrated through studies of the genetically directed building blocks of life that there is little difference among the humans throughout the world, culture, on the other hand, not only varies widely but also is very influential in behavioral patterns. Unless a strategy that essentially transforms the culture is viable, conformance of the product with cultural standards is virtually mandatory.

In seeking to learn about potential domestic consumers, it is important to know where they are, the conditions under which they live, and their demographic characteristics. Factors of interest are populations in urban, suburban, and rural areas; their geographic locations and positions in the administrative organization of government; and climatic conditions. Demographic characteristics that can influence consumption patterns are income, age, sex, employment, education, family size, cultural norms such as religion (as it affects consumption), lifestyle, social order and class, psychology, political orientation, consumption motivations and usage rate, brand loyalty, and sensitivity to promotion.

Psychological characteristics of potential consumers are relevant to identifying the market and the marketing approach, for example, to what extent they are brand-oriented or buy on impulse and to what extent they are aware of their needs and wants, which have both functional and emotional dimensions.

**Export markets** Extending the market outside the borders of the host country is a possibility for most projects of any size; plant capacity must be adequate to serve both domestic markets and planned exports. Even if the project is conceived primarily as import substituting, export may be possible either immediately on commencement of production or after a period of operations, during which productive skills can be developed to achieve international quality standards at a competitive price, which is particularly relevant for industrial products.

Cultural patterns have to be considered when attempting to export the value system, mores, habits, business protocols, and etiquette. Use of language is crucial, taking into account idiomatic nuances and variations. These problems are particularly acute for a product unfamiliar to the target population.

**Product Classification**

The type of product to be produced by the project is fundamental to identifying potential consumers and the marketing approach. They can be classified
CONSUMER GOODS

PRODUCER GOODS

PRODUCTION EQUIPMENT

RETAIL

CONVENIENCE

SPECIALTY

RAW MATERIALS

PROCESSED MATERIALS

PARTS AND COMPONENTS

SUBSYSTEMS

MACHINERY AND EQUIPMENT

TOOLS, JIGS, AND FIXTURES

**FIGURE A4.2** Product Classifications

as consumer products, intermediates, and production machinery and equipment (see Figure A4.2).

**Consumer products** Members of households intend these products for final consumption, including processed foods, clothing, and household services. They are purchased daily, frequently, or occasionally. Demand is affected by income, price, cross elasticity (responsiveness of demand for project output to a change in the price of another product, e.g., autos refuel), obsolescence, substitutes, and complementary products (demand dependent upon consumption of project output). Consumers ordinarily seek the best combination of quality and price, although sales of specialty products are highly dependent on brand or trademark loyalty, sometimes with a reverse demand curve (higher price, higher demand); convenience products are purchased usually as an adjunct to other consumer activities (e.g., food at sports events) and are not subject to the same competitive pressures as normal consumer products.

**Nondurable products** are consumed quickly. Perishable products and others with short shelf lives (e.g., cheese) are purchased frequently to satisfy immediate demand. Other products are replaced frequently, such as lightbulbs.

**Durable products** are not consumed immediately but used over an extended period of time until their wear and tear and obsolescence convince their users to replace them. Washing machines, televisions,
and refrigerators are some examples. They can be initial purchases or replacements that constitute a continuing cyclical demand.

**Seasonal and cyclical products:** Consumption of seasonal products varies according to an annual pattern (e.g., light clothing for summer wear in northern climates). Cyclical consumption fluctuates in synchronization with the economic cycle, for instance, consumer durables.

**Product innovations:** Products that are new to the market have no historical pattern of consumption and require special marketing techniques to inform consumers and to generate interest. For gathering market information, primary data collection techniques have to be applied.

**Intermediate products**  
*Producer or industrial products* are intermediates used in downstream production of other products and services. They consist of processed intermediates, such as raw and processed materials, parts, components, subsystems, and operating supplies provided to original equipment manufacturers (OEMs). Consumer and producer products are not always clearly distinguishable. Application is the key to determining in which category the project output would fall. For example, fruit when consumed fresh is a consumer good, but when it is used as input in a juice plant, it is a producer good. The distinction helps to understand demand for a given type of good or service.

Industrial needs are most frequently based on a clearly defined purpose, with little relevance of psychological marketing approaches. There is often comprehensive or expert knowledge of the product. Purchasing decisions are often more complicated than for individual consumers, with the involvement of technical, management, and financial personnel.

**Machinery and equipment**  
Industrial projects, as well as infrastructure and agriculture, usually require machinery and other ancillary equipment for production. Design standards are specified by regulatory agencies, engineering societies, and trade organizations, usually specifying construction features, standard capacity ratings, external operating conditions, and safety features.

Demand for industrial and other types of machinery and equipment is segmented into various industries, such as agriculture; construction and mining; food processing; packaging; cutting, joining, and forming; electrical generation (turbines and reciprocating); printing; compressors and vacuum pumps; and aircraft engines. Demand is dependent on developments in the
industry: corporate initiatives, mergers, acquisitions, start-ups, and the economic and political situations in regional and national markets.

**Data collection**

Information is gathered not only about markets per se, but the entire spectrum of factors on which they are dependent: within the enterprise and the commercial and wider domains. One of the first tasks is to decide what information is available and what is needed to fill the gaps.

Not all available information is relevant for the project. Historical production figures and data on imports, consumption, or prices are often skewed by conditions in the country from which they are derived, resulting from market constraints and interventions. Consumption and trade may be distorted by market imperfections, such as competition thwarted by monopoly or oligopoly or trade policies (e.g., high import tariffs).

Information can be found in official published data, including statistical handbooks, census reports, area or sector opportunity studies conducted by government agencies (e.g., departments of commerce and industry), from associations such as Chambers of Commerce, trade and professional organizations and publications, and business journals and periodicals. Data are seldom conveniently organized for market research and may serve rather as a starting point for the work.

Published import data are often out of date and aggregated into a single product category that obscures information for the specific product of interest to the project. Should recent import statistics be unavailable from one government, a picture might be deduced from export statistics of others. Quantitative parameters of the market can be estimated from published (and sometimes unpublished) statistical compilations. Unpublished information can sometimes be found in obscure corners in the hands of researchers in government or industry and commerce agencies. Collection of such information might be costly.

In some cases, only a few years of data might be available, so that trend extrapolation is unreliable. Some data are not adjusted for abnormal variations over the covered time span. Figures for a single recent year should not be used as a basis for projections.

Information is gathered from primary (surveys and tests), secondary (published and unpublished), and tertiary (data analysis) sources. Secondary and tertiary market information\(^1\) can be supplemented with interviews with

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\(^1\)Secondary and tertiary information in the form of statistics and analyses prepared originally for other purposes.
knowledgeable individuals, tests, and observations. Primary information is derived from field surveys, experiments, or test marketing, which generally provides more specific and reliable quantitative and qualitative information but is usually expensive; whether to seek primary information is generally a function of the availability of accurate secondary information, the stage of project development (preliminary, advanced), and cost.

Market information is often in the form of statistics: compilations of numerical facts or data. Large amounts of seemingly disparate information or data can be interpreted meaningfully using mathematical statistical methods and other analytical techniques.

Types of information Some types of information relevant to market research are the following:

- Consumers group or population segment
- Current consumption
  - Products or services currently offered to the market and the particular segment(s) of the market currently being addressed
  - New versus replacement, seasonal (varying demand by season of year) and cyclical (fluctuates with economic cycle, e.g., consumer durables)
  - Pending innovations in product design or applications
  - Industrial markets segments: number and type of users, size, ownership, age of equipment, regional concentration, vertical versus horizontal markets, buying power, number of employees, number of plants
- Product data
  - Description: characteristics of the competing product currently offered in the market
  - Classification: consumer, intermediates, or production machinery and equipment (the marketing approach will probably differ for each; product types are shown in Figure A4.2). Standard classification (e.g., ISIC standards): performance specifications; material standards (e.g., domestic or international for composition of materials: strength, durability, certification by domestic or international testing laboratories)
  - Price and trends: historical data, trend, cyclical patterns, statistical deviation and variance, averages, minimums and maximums, discriminatory pricing, price levels: ex-factory, FOB, CIF (for competitive imports)
  - Configuration and characteristics of existing product: performance specifications: quality, material composition, design; color; size, packaging; brand, label, fragility; service requirements
  - Current uses: applications as currently offered and promoted and other applications by consumers
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- Relevant product innovations
- Substitutes and near-substitutes (e.g., PVC pipe rather than copper pipe for water distribution): under development and other information relating to possible product obsolescence
- Complementary products (consumption linked to project output, e.g., farm implements for tractors)
- Critical resource requirements for production: suppliers, capacities
- Product acceptance: level of satisfaction with existing brands and the level of acceptance of their attributes (why favored and what would be preferred)

- Competition, alternative suppliers
- Number and characteristics of other domestic producers: production and sales quantities, segments served, market share, qualities
- Strengths and weaknesses: internal strengths and weaknesses in relation to the market and ability to carry out its selected strategies
- Capacity utilization: average and cyclical, constraints on production (e.g., capital, infrastructure, supply), planned ventures of existing and potential competitors

- Marketing strategies: product (features, segment approaches); price (pricing policies and practices in the market, standard markups, customary discounts and allowances, price competition); distribution channels: number and type of intermediaries, forms of ownership, marketing responsibilities, intermediaries’ strengths and weaknesses; physical distribution: transportation routes and carriers, costs of transportation, warehousing system and costs; promotional strategies: existing promotional media and content, susceptibility to different promotion approaches (by segment); use of promotion agencies and costs; marketing expenditure, intensity

- Market orientation (e.g., joint ventures, technical or marketing cooperation); relations with suppliers and clients (e.g., product return policies, purchase agreements); subsidiaries or investment in technologically linked enterprises and their relationships to the parent enterprise

- Trade: imports and exports, trading partners, quantities, qualities, prices, tariffs and duties, trade restrictions

- Market environment

- Macro environment: The state of the national economy, size and rate of growth of GDP per capita; income distribution; inflation rate (can influence short-term demand for affected items as a hedge); savings rates (high rate tends to reduce demand for consumer products but stimulate demand for producer products); balance of payments (affects exchange rates and terms of trade, which affects prospects for exports and competitive demand for imported products); fiscal and
monetary policies, as reflected in income and taxation; degree of political instability (positive for some products, e.g., staples, and negative for others, e.g., luxury products)

- Government industrial policies, practices, and legislation related to consumption, production, imports and exports of project output, standards, restrictions, duties, taxes, subsidies or incentives, credit policies, foreign exchange regulations, fiscal and monetary policies
- Status of sector of interest: domestic production, trade, dynamics
- Physical environment: Public alertness to environmental issues can affect demand for products that create problems of pollution or disposal; poor transportation infrastructure discourages demand for fragile products; inclement weather patterns are a factor, positive for some products (e.g., agricultural fertilizers and chemicals) and negative for others (e.g., recreational items).
- Linked industries: Strong demand for downstream production is a positive influence on demand for project output
- Export markets: The state and trend of trading partners’ economies affect their volumes of exports and imports, affecting demand for the project’s exports and for import substitutions. The political situation affects the degree of market stability. Information can be obtained from distributors in target market countries, from international trade statistics and from international trade organizations (e.g., ITC in Geneva):
  - Importing and exporting countries for the product and respective quantities and prices
  - Structure, strengths and weaknesses of competitive exporters, shipping routes and rates
  - For target market countries:
    - Economic state and trend, general trade and payments balances, fiscal and monetary policies
    - Import policies, such as financing, tariffs, subsidies, procedures; quotas, import duties
    - Quality and safety standards, design preferences
    - Demand-supply gap and structure: proportions of consumption from imports and domestic production
    - Competition from domestic producers
    - Distribution channels: trade representation, structure of intermediaries, commission and fee structure, price buildup, strengths and weaknesses

**Secondary and tertiary information** Information prepared by researchers, either in the form of pure or analyzed data, can be found in periodicals, research publications, project reports and profiles, in research institutions
or obtained from individuals. Most countries publish statistics concerning their production, exports and imports, and inventories.\footnote{Statistical information is presented according to national or international standards such as SITC (Standard International Trade Statistics) or NAICS (North American Industry Classification System).} Data collected by government agencies often are not published but are available to the ardent researcher. Demographic information can be obtained from census reports published by governments and private organizations. Organizations such as ITC (Geneva) and GATT publish very comprehensive data on international trade. World Bank, IMF, UNIDO, and UNDP are some of the sources of valuable information. Trade statistics have been distorted on occasion both by traders and governments for their own economic or political purposes.

_Tertiary information_ in the form of analyses or opinions concerned with general economic conditions, with the business environment, or with the industrial subsector of interest can be obtained from journals and other publications or from interviews with experts. Nontraditional sources can also provide useful information: people involved in the industry or similar businesses such as officers and members of trade and industry associations; members of the business community, including bankers, brokers, traders, and agents; and from observing phenomena in the industry, such as activities of competitors.

Secondary and tertiary information can be applied at the early stages or even in the latter stages of project design if it is considered reliable and relevant. Market study in this form does not always flow with a convenient sequential logic. At some point, a comprehensive picture should emerge (it may occur suddenly). If it does not, the project is not really ready for implementation.

A good feel for the market can be obtained by discussions with knowledgeable persons and organizations, such as:

- Trade associations
- Chambers of commerce and industry
- Distribution channel elements of competing brands
- Regulatory and tax authorities
- Consulates, commercial departments of foreign embassies
- Customs authorities
- Officials in development and commercial banks
- Officials in industrial promotion agencies of government
- Consultants, technical experts

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- Consultants, technical experts

\footnote{Statistical information is presented according to national or international standards such as SITC (Standard International Trade Statistics) or NAICS (North American Industry Classification System).}
Informal primary information  Some primary data can be obtained by informal means from individuals and groups involved in production, consumption, or distribution of the product.

- Discussions with knowledgeable persons: bankers, officers and members of trade and industry association (e.g., Chambers of Commerce, Rotary Club), entrepreneurs
- Discussions with potential consumers, traders, and managers of similar businesses (may be potential competitors)
- Observing the actions of competitors and traders

Survey  A survey is usually expensive and time-consuming, but it provides a reliable foundation for assessing the market if properly executed; it should be undertaken only after secondary and tertiary information has been fully exploited.

The process of collection is structured to provide the widest coverage of potential consumers within budgetary constraints. The survey may supplement or complement other forms of market research, to be employed when other forms of access to information are not available. The survey should seek to collect only necessary information, to minimize costs, and to avoid straining the tolerance of respondents with lengthy and unnecessarily detailed interviews.

Field surveys can be oriented to consumers or to the industry or trade. Subjects can be drawn from users of competing or related products or from potential consumers and intermediaries (wholesalers, distributors, or retailers). Industry surveys are directed at competing enterprises, government industrial and infrastructure planning agencies, development and commercial banks, or experts and consultants.

The quality is usually enhanced when designed by an independent specialist, who can apply experience and expertise to plan a comprehensive and unbiased survey. In some cases, ensuring confidentiality is essential for obtaining valid responses. In developing countries, traders may constitute the only viable source of information in the field.

Test marketing  For a new product or product innovation, test marketing can be employed to understand consumer reactions, their tastes and preferences, as a means of predicting demand and estimating sales. A small sample of the market or segment is selected as subjects.

\[ \text{A more thorough discussion of test marketing is contained in Kotler and Philip, Marketing Management, 7th Edition, Prentice Hall, 1991.} \]
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In a market test, subjects can have direct experience with the product and then respond to questions of an interviewer or response form. Free samples can be offered with a mechanism to gauge responses. Alternatively, the product can be explained to potential consumers, who are then interviewed to obtain responses, such as perceptions, attitudes, advantages and disadvantages, pricing, and intention to purchase. This avoids a potential problem with a survey, in which subjects may have little or no experience with the product. This approach is primarily applicable for product innovations or where an existing product is to be introduced to new segments.

In a relatively simple version, potential consumers can be provided samples, or the product can be demonstrated or explained. Consumers are then surveyed. In a more complex version, a promotional campaign is first executed to target market segments: dissemination of product information through one or a combination of broadcast, print or social networking media, psychological appeals, demonstrations, or purchase incentives. The product is then introduced to these market segments, and consumption information collected and analyzed. After the test marketing process, a survey is conducted to measure consumer reaction. The intent is to compile information necessary to project sales of the product to the entire target market.

The test market can be supplied either by a pilot plant, through generic producers or imports. In any case, product standards should be representative of full-scale production. The pilot production can also be used (judiciously) to provide information on technical parameters of production and costs to be tested against expected sales price.

Simulation A simulation can provide information similar to that of test marketing. The test is designed as an experiment simulating market conditions and observing the behavior of consumers. Experiments or tests that examine consumer reaction to one or more treatments are compared with reactions of a control group that does not receive the treatment. A treatment can consist of subjecting a group to a promotional device and then measuring responses to a product or product features. Some tests are performed to assess consumer reactions to competitor products as an indication of design features that would provide a competitive edge. Experiments can also be performed to gather information on product features without regard to consumer reactions, for example, reliability (failure rate) tests.

In a typical simulation, the tested (treated) group(s) of potential buyers are offered options to purchase a variety of products. The behavior of the treated and untreated groups and their ultimate decisions are recorded. An advantage of this type of market research as compared with test marketing is that it can be performed in a centralized location and in a relatively short period of time. The costs may be lower than for test marketing.
Data derived from this type of experiment can be analyzed statistically using regression methods or analysis of variance (ANOVA). In the latter method, a hypothesis concerning the effects of the treatment can be tested and either accepted or rejected. A simpler approach is to draw conclusions from the data without subjecting it to rigorous analysis.

The Forecasting Model

Ultimately, the purpose of a forecast in this context is to predict the amount and timing of sales revenues, which derive from quantities and prices of product to be sold. A logical approach is first to predict demand and consumption (see “Demand Nomenclature”), the amount of the product that will actually be purchased by consumers. Further, the model has to help in determining the portion of consumption to be satisfied by the project (and by competitors), that is, market share, and the rate of market penetration, how market share is to be acquired over time, as a means of predicting the revenue stream and the appropriate plant capacity. Types of forecasting models are explained in Chapter 7, “Forecasting,” and generally can be broken down into quantitative and qualitative (descriptive) methods, which are inevitably linked. In any case, the starting point is usually demand.

For traditional products, one assumption that will almost assuredly bear out is that prices will eventually clear the market, even though there may be a short-term demand-supply gap. If supply is (in the short term) smaller (larger) than demand, prices go up (down). What this means to the project is that cost of production is essential in determining the size of the market that the project can possibly serve.

An approach for a wide variety of products, from traditional to innovative, is to decide, on the basis of scenario projections, what the project wants to accomplish and then design a marketing approach to get to that level.

Numbers derived in isolation from qualifying information are often unsupportable; the approach should be multifaceted, rather than relying strictly on quantitative information for projections (see Chapter 7). The truth is that in the dynamic market of global proportions, projecting demand on the basis of historical information alone is not very promising. Understanding the dynamics of the market is most often a much better way of assessing market potential, utilizing a future-oriented approach that can have both qualitative and quantitative dimensions. One approach is Reino’s Rule,⁴ which takes a skeptical view of statistical information:

⁴Reino Routamo, Finnish marketing consultant.
1. If the project intends to capture 2 to 4 percent of the market, forecasting is useless; a good entrepreneur will manage to get this share because it is too small for competitors to take the trouble to fight back.

2. If the project seeks 10 to 20 percent of the market, the competition is the key, so why bother with forecasts (except in relation to possible competitive countermeasures).

3. If the target is 70 percent or more of the market, the most important thing to do is talk to politicians and government officials, so...

**Demand**

In general, demand is the composite propensity of those who are willing and able to consume project output, the level anticipated in the economy or world market, as the case may be. It can be further defined as the total volume of the product (good or service) likely to be consumed by a group of consumers, in a particular geographical area, during a specified time period, under a particular marketing approach.

Demand generally varies over a product’s life cycle (see “Product Life Cycle”). The starting point for estimation is statistical or survey information. The relevant consumer group may be an entire population or a segment having particular characteristics compatible with consumption of project output. For innovative products, there may well be no historical data that are meaningful, in which case estimates of demand would have to be derived from primary data, such as surveys, or test marketing, or from expert opinion. In fact, most products introduced to the market in virtually all parts of the world are, to some extent, innovative. The product to be offered may have improvements anywhere from slight to major, novel packaging, or even a different approach to consumer appeal. For this reason, with the exception of products that are truly generic (e.g., some production of pharmaceuticals), historical information has to be regarded with some skepticism. Depending on the type of product, demand can be highly influenced by the marketing effort planned. This is true to a greater extent for discretionary consumption and to a lesser degree for basic items.

**Demand nomenclature**

Understanding the nuances of demand and consumption is useful in forecasting.

_Autonomous and derived demand:_ The former is not tied to demand for any other item, whereas derived (indirect) demand is linked to demand of other products. Is there really autonomous demand? Even demand for eyeglasses might be related, to some extent, to demand for TV sets.
**Individual and market demand**: If each individual or other entity within the market demands a quantity $x$ of the product in a year, then the market demand for the year will be the number of entities multiplied by $x$. Total market demand is the aggregate for all types of entities that comprise the market.

**Apparent consumption** is measured during a period of time, usually a calendar year, as determined from statistical information involving output of existing producers, imports, exports, and change in inventory during the period (see formula later in this section).

**Effective demand**: Apparent consumption does not necessarily reflect current or future demand. Effective demand is the quantity that consumers are actually buying at the current market price.

**Latent demand**: Some potential consumers have all the attributes to consume, but do not have access to the product, either are not aware or are unwilling to buy for reasons other than ability to pay. The product may be inaccessible because the infrastructure is insufficient; supply may be constrained; there may be cultural inhibitions.

**Unsatisfied demand**: This is the difference between effective demand (all consumers who are willing to buy and able to pay) and those who actually purchase the product, essentially the demand-supply gap. This is usually a short-term phenomenon. The market usually tends to adjust the price to the supply-demand situation.

**Potential market**: The current effective demand may not be a good reflection of potential: inadequate promotion, inferior quality, pricing.

**Degree of market saturation**: The proportion of effective demand that is currently served; for the project, the current effective demand may not reflect the extent of the potential market, for example, if a new marketing strategy is to be employed to stimulate demand or if the product is innovative.

**Determinants of demand**  As a general rule, demand is a function of consumer preferences and behavior, the market environment, internal factors more or less under the control of the project, that is, the marketing approach, and other factors such as product life cycle.

**Product life cycle (PLC)**  Most products traverse a life cycle comprised of phases in which the rate of growth of demand varies widely. The usual phases are start-up, growth, maturity, and decline. The marketing strategy has to adapt to conditions that vary in each phase: strategic objectives, competitive
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FIGURE A4.3 Product Life Cycle

situation, price and cost structure, and specific market conditions. Figure A4.3 illustrates a typical PLC.

At the time of entry, the project’s output may be in any of the typical phases of its PLC, which may differ depending upon context, the world economy or the economy of a single country.

Profitability is a function of the phase in the life cycle of the subsector, which in turn determines the intensity of competition. Competition is most intense if the project has to compete for slowly growing, stagnating, or even shrinking sales. Some characteristics of each phase are as follows:

**Start-up**: Usually a high growth-oriented phase. As the product has just been introduced, demand has to be created, so that there is a relatively high level of risk and uncertainty. Costs tend to be high, and so are the prices.

**Growth**: Demand is more firmly established and increasing, with few competitors and higher profitability; there are product or process advancements or enhancements introduced by new entrants. At this phase, income elasticity of demand is high (greater than 1).

**Maturity**: As the market ages, growth slows, and profits tend to decline, as there are more competitors on the market. Demand grows approximately at the same rate as GDP.

**Saturation**: As all potential new buyers already have the product, demand is reduced basically to replacement (e.g., TV sets); profitability
comes under pressure; unless market share can be wrested from ex-
isting producers, possibilities for expanding the market are small to
nil (only innovation can circumvent the demand-supply constraint).
Income elasticity of demand is low (less than 1).

Decline: Demand decreases as a result of product obsolescence, or new
technology offers a worthy substitute (such as optical fibers vs.
copper wire). Some producers are forced out of the business as
profitability shrinks. The stage of decline may coincide with the end
of the investment cycle, when decisions are appropriate for the next
phase of investment (see Chapter 1, “Investment Cycle”).

The PLC is an important element of demand forecasting. Some of the
traditional forecasting models (see Chapter 7, “Investment Decision Under
Uncertainty and Risk”) are predicated on assumptions relating markets to
general economic trends, demographic factors, or consumption patterns of
linked products and services. Knowledge of where the product stands in
terms of the PLC can be a significant factor in adjusting these models to
demand estimates for the product and market more realistically.

PLC does not normally apply to basic or traditional products; national
or cultural characteristics are the primary demand determinants, unless the
local economy and culture is in the process of global integration or other
type of upheaval.

PLC in the long term depends on technological developments; technol-
gy forecasts would be advisable for products with observed shorter life
cycles.

Life cycle of the subsector\(^5\) The strategy to be employed by the project
depends upon analysis of the status of the product or subsector in regard
to its phase in the life cycle, which is a determinant of the present and
future development of market potential. The pattern of growth and decline
is similar to that of a single product (see Figure A4.3). The subsector may be
in any of the typical phases of its life cycle, which may differ in the context of
the world economy or the economy of a single country. The extent to which
conditions in any phase of the product or subsector life cycle are affected
by the economic cycle is generally a function of the type of product. Some
tend to follow the economic cycle (e.g., luxury items), while others are less
dependent (e.g., basic commodities).

Consumption For a product currently offered in the market (region or
country), apparent consumption is covered by local production and imports.

\(^5\)A subsector is a group of enterprises with identical or similar products.
Supply: In using statistical information, the validity in terms of the specific product of interest has to be taken into account. Often data are aggregated and cannot be directly associated with the specific project output. Warranty services and product losses in distribution channels are another factor, as well as accuracy of available data.

Demand (apparent consumption): The relationship is based upon statistical information:

\[ S = P + M \]
\[ C = S - (X + \Delta I) \]
\[ C = P + (M - X) + \Delta I \]

\( S \) = Supply
\( P \) = Production
\( C \) = Apparent consumption
\( M \) = Imports
\( X \) = Exports
\( \Delta I \) = Increase in inventories

Increase in inventories is a sign that apparent consumption, both local and exports, is lower than production. The reverse is true if inventory declines, representing product consumed from inventory. The gap (if any) between demand and supply indicates the ease of penetration of the existing market by the project. The higher the gap, the greater are chances of being able to effectively penetrate the market with an appropriate marketing program.

For innovations, advances in technology of existing products, or novel products, the existing supply situation and consumption information are not very meaningful. For all practical purposes, there will be no supply, and certainly no supply data. In this case, estimates of the demand have to be derived either from primary data or from expert assessment.

Demand-supply equilibrium In efficient markets, where information flows freely and there are no constraints that impede access of buyers and sellers, an equilibrium price clears the market. Figure A4.4 shows the equilibrium relationship for demand and supply.

Generally demand falls with price: There are fewer potential consumers who are willing and able to buy as the price increases. Suppliers are encouraged to produce more as the price increases. Suppliers will presumably enter the market with more products so long as they can obtain the required price, essentially based upon their production costs and margin expectations. The more efficient producers will take up the last segments of the available market, as their criteria are more readily satisfied. No suppliers will produce
Demand-Supply Equilibrium

beyond the equilibrium point because the marginal cost of production is too high, and consumers are not willing to pay the price.

The supply or demand situation can change. For producers, if the price of a major input increases, for example, the supply curve shifts upward as shown. Then there will be a new equilibrium price and quantity at which the market will settle. The increased price will result in lower quantity sold and, at a given production level, higher inventories.

Markets are seldom perfect in the sense that prices reflect the equilibrium price. Some of the reasons for price distortions are monopoly, oligopoly (small number of firms controlling the market), product differentiation (real and contrived), promotional distortions (implementation of corporate marketing strategies), and interventions (tariffs and duties, subsidies, quotas, foreign exchange controls, entry barriers, official price controls).

Types of forecasting models  A model for forecasting demand can be derived considering any of the determinants of demand (see “Determinants of Demand”) as variables, or others, such as macroeconomic features (GDP per capita), marketing variables (see “Marketing Variables”), and corporate characteristics. Variables may be specific for targeted geographic regions, such as demographics, climatic conditions, cultural patterns, and competition.

Models can be quantitative, qualitative, or a combination. A primary decision is selection of variables that are relevant for the product under study, and how they are related. Some variables can be considered external, but others involving the marketing approach (application of internal marketing variables) can also influence the magnitude and the proportion
of demand captured by the enterprise. Demand elasticity might be an important predictive factor (see “Price and Income Elasticity”); for products with highly elastic demand (large variation in demand for a given change in price), pricing might be a potentially significant aspect of marketing. If a quantitative model is to be utilized for extrapolation, the amount of data should cover at least a number of years of the same order of magnitude as the number of periods to be projected. It should be kept in mind that price is a short-term phenomenon, while the investment project is a longer-term endeavor. Consequently, more important is the study of interrelationships between income and population growth and demand.

Quantitative forecasting models relate the dependent variable (demand, consumption, sales revenue) with independent variables. Models can be based on historical statistical information, future-oriented conceptions, or a combination. Qualitative models employ primarily scenarios for which the reaction of the market can be logically supported. A useful technique is to try to explain the steps from the status quo to the projected situation. For example (in retrospect): cell phones will displace a large proportion of wired phones in most regions and countries and provide service where it does not presently exist. Convenience and portability will be the promotion themes. Communities will be influenced to allow construction of signal-emitting towers to serve growing demand by individuals without current access to phone service. The scale will permit manufacture at a price acceptable for lower-income workers in most markets.

In creating the model, it is important to distinguish between market potential (maximum demand), market volume (current consumption), and the market share to be secured by the project. The relationship is illustrated in Figure A4.5. The existing market potential and market volume may be affected by the project’s marketing activities.

Data and other information obtained through research are used to assess the current levels of market potential and market volume. Projections of future demand potential and volume should be developed using forecasting techniques (see Chapter 7). Projected estimates of demand and the marketing strategy adopted are the basis for estimating the proportion of the market, or market share to be secured by the project, which in turn is the basis for projected sales revenues (quantities and prices), the production program, and plant capacity.

Forecasts inevitably involve assumptions and probabilities. Uncertainties abound in virtually all project dimensions, including factors affecting markets. Some factors relating to demand are not apparent and will likely not be discovered with the most scrupulous attention. Unpredictable events, such as political change and its consequences, can cause enormous change in costs and prices, indirectly altering effective demand.
Price and Income Elasticity

Elasticity is a useful concept for demand forecasting based on assumptions (or projections) of associated variables. It is defined as ratio of percentage change in demand to percentage change in price or income:

\[ e = \frac{\% \text{ change in demand}}{\% \text{ change in price (or income)}} \]

Two types of elasticity that can shed some light on the demand forecast are price and income, change in demand corresponding to a change in each independent variable. Elasticity is a function of the particular level of current demand; in other words, it varies, as seen in Figure A4.4: the change in demand corresponding to equal changes in price is not constant. This might be an important predictive factor, particularly for products with highly elastic demand (large variation in demand for a given change in price).

If the project intends to use a price strategy for gaining market share, the elasticity of interest is related to the price change contemplated. The supply gap would ideally be filled by the project. The appropriate increment of income would be selected in accordance with dynamics of the macroeconomic system.
Mathematically, elasticity can be determined as follows:

\[ e_p = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}} = \frac{\frac{Q_2 - Q_1}{2}}{\frac{P_2 - P_1}{2}} \]

\[ P = \frac{P_1 + P_2}{2}, \quad Q = \frac{Q_1 + Q_2}{2} \quad (approximately) \]

\[ e_p = \frac{(Q_2 - Q_1)(P_1 + P_2)}{(P_2 - P_1)(Q_1 + Q_2)} \quad (approximately) \]

For \( Q = a + bP \),

\[ b = \frac{dQ}{dP} \]

\[ e_p = b \frac{P}{Q} = \frac{dQ}{dP} \frac{P}{Q} \]

where \( e_p = \) price (or income) elasticity

\( Q = \) quantity (demand)

\( P = \) price (or income)

1 signifies starting or current value

2 signifies final value (starting value plus increment)

\( \Delta \) signifies change (increment or decrement)

\( dQ \) and \( dP \) are differentials

In the approximate formula, it is better to use the average values of \( P \) and \( Q \) as shown, as this provides a more accurate estimate. In general, the value of \( P/Q \) changes with \( P \); therefore, the elasticity varies with each value of \( P \). More generally:

\[ e = \frac{dQ}{dP} \frac{P}{Q} = \frac{\ln \frac{Q_2}{Q_1}}{\ln \frac{P_2}{P_1}} \]

For functions with constant elasticity:

\[ Q = a P^\beta \]

\[ e = \frac{dQ}{dP} \frac{P}{Q} = \beta a P^{\beta - 1} \frac{P}{a P^\beta} = \beta \]

where \( a = \) numerical constant

\( \beta = \) elasticity
The exponent $\beta$ expresses the percentage change of quantity $Q$ per percent change in price (in this case). Substituting income for prices in this formula will give income elasticity of demand.

**Cross elasticity: Relation between products A and B**  If demand for product $A$ varies with change in the price of product $B$, there is a relationship that can be defined in terms of cross elasticity. It is the change in demand for product $A$ corresponding to a change in price of product $B$.

$$C_{AB} = \frac{(Q_{A2} - Q_{A1})(P_{B2} + P_{B1})}{(P_{B2} - P_{B1})(Q_{A2} + Q_{A1})}$$

where $Q_{A1} = \text{Initial quantity (demand) for product } A$
$Q_{A2} = \text{Final quantity (demand) for product } A$
$P_{B1} = \text{Initial price of product } B$
$P_{B2} = \text{Final price of product } B$

Product $B$ can be a substitute for, or complementary to, product $A$, or its demand can be independent of product $A$. If the value of cross elasticity is:

- $> 0$  Product $B$ is a substitute for $A$.  
- $= 0$  No relationship.
- $< 0$  Product $B$ is complementary to $A$ (a decrease in the price of $B$ increases demand for $A$).

**Compound elasticity**  A forecast of demand based on elasticity might be related simultaneously to two or more variables, say, price and income. For the two-variable case, the relationship is:

$$Q = kP^e R^b$$

$$\ln Q = \ln k + e \ln P + b \ln R$$

$e$, bare partial elasticities of $Q$ with respect to other variables

where $k = \text{numerical constant}$
$P$ and $R = \text{independent variables}$

**Domestic Competition and Imports**  
How supply will be affected by competitors’ reactions to the presence of the project is a key issue: countermeasures or actions that competitors are
expected to take to maintain market share in the face of new competition; how they may employ competitive advantages such as higher productivity in the face of the project’s marketing strategy; the competitors’ strengths (brand recognition, well-respected product services, high productivity) and weaknesses (poor management, inadequate distribution channels, low or inconsistent product quality); how competitors use their marketing tools, namely, the extent to which they utilize media and other marketing channels and restrict access for the project; the market segments in which they concentrate their efforts as an indication of market segments that are not at present adequately addressed.

Information concerning major competitors and the existing supply of planned project output is used in the formulation of the forecasting model. For innovative products, this information may relate to potential competition from enterprises with the skills and abilities to develop and market similar or substitute products. The possibility of substitutes can radically alter demand.

A portion of domestic supply may be covered by imports, which can be applied to local consumption and for reexport, which reduces domestic supply. The relationship between domestic and international prices can have a strong influence on how much of supply is covered by imports. Some factors of interest:

Terms of trade: The demand-supply situation will be affected by the relationship between prices at which the country sells its exports and the prices paid for imports. If prices of exports rise relative to prices of imports, trade conditions are improved because the country receives more imports for each unit of goods exported. The country’s balance of payments affects terms of trade; when foreign currency is in short supply, exchange rates (local to foreign currency) tend to increase and terms of trade tend to deteriorate.

Trading partners: Volume and percentage of exports, relation to project requirements, exchange rates, structure of industry, exchange rates, risks.

Trade regulations, general and country-specific: Quality standards, material standards, production standards, quotas, taxes and subsidies, trade restrictions.

Shipping and handling: Cost of processing, port facilities, transportation media, risk, insurance terms and costs.

Trade organizations and agreements: Applicable agreements and terms, such as GATT, WTO, free-trade agreements (e.g., NAFTA), trade blocks, and common markets.
Summary information related to the effect of competition on the market is contained in “Competition, Alternative Suppliers.”

**MARKETING**

For the market identified through research, the means of attracting and influencing potential consumers has to be designed and implemented. Simply stated, “You can build a better mousetrap, but people have to be convinced of its utility, and have to have access to it, before they use it.” A marketing strategy is needed to secure market share and penetration, to build strong consumer relations in a way that is compatible with that of the overall project.

Marketing is the process of approaching customers or clients to attract them, to convince them to consume project output, and to secure their loyalty. In the context of the marketing concept, anticipating and satisfying the needs and wants of potential consumers is the most effective means of achieving project goals.

Enterprises are not completely independent and autonomous in a market and within an economy or socioeconomic system; interdependencies exist between competitors and partners and between producers and consumers. The marketing strategy is to function in a system of producers and consumers operating within an environment, which includes channels of distribution and promotion and which may change over the course of the project life. Competitors may employ a range of strategies and channels (see “Strategic Options”); part of the marketing approach may involve wholesalers or retailers offering special consumer services; approaches to market segments may vary based on consumer preferences or purchasing power.

Targets (population segments) are required to properly orient the marketing effort. This information from market research and analysis is the foundation for strategic planning and application of marketing instruments to achieve sales objectives and desired position in regard to product and target groups.

The product’s existing marketing system is an important aspect of developing the marketing strategy, that is, an understanding the structure of marketing channels and the strategies currently employed at each level in the distribution chain. Figure A4.6 is an illustration of a marketing system, part or all of which the project may seek to employ.

Each element in the existing marketing systems and those likely to be employed by new competitors has its own marketing mix of strategies and tools that bear on design of the project’s marketing system. How competitive enterprises and other members of the marketing and distribution chain
employ marketing variables (their marketing mixes), how they structure and execute promotion and distribution functions, and their roles and operating modes are fundamental to devising an effective marketing strategy and program. If the project is an interloper in an existing market system, how other participants are likely to react is crucial planning information.

A marketing concept encompasses the marketing strategy, its foundation, and the means to carry it out, as illustrated in Figure A4.7. Project goals and objectives are derived from analysis of internal strengths and weaknesses and opportunities and threats in the wider domain. Of the strategic options that are feasible in this context, the job is to find the one that best suits the project. The marketing concept has to fit into the project’s strategic framework, predicated on the objectives and principles of project sponsors and investors; in fact, in most cases it is the heart and soul of the project strategy.

The strategy of marketing and the resulting marketing system to achieve revenue targets are developed in conjunction with product and consumer identification, as they are inevitably interrelated. What should be the precise nature of the product, what is the best way to inform prospective clients, how can clients best be convinced of its utility, how should the product be
packaged, and what are the most appropriate methods of distribution? Resolution of these issues is the framework for marketing strategy and marketing system decisions that are an essential part of investment project planning. This analysis is intended to define the marketing strategy that is most likely to achieve the project’s market and revenue targets.

The optimal strategy is selected by examining alternatives:

- To what extent does the alternative fulfill the project’s market goals and objectives (e.g., share, penetration, distribution, revenue, costs, customer loyalty) ?
- What are the financial and socioeconomic impacts of the alternative (profitability, return on investment, net benefits) ?
- What risks are linked with the alternative (e.g., political, ecological, financial) ?

The strategy selected has the following defining characteristics:

- Basic strategy to be adopted, including cost leadership, differentiation, expansion, market niche
- Targeted markets and segments
Market Share and Strategy

The selection of a marketing strategy may be affected by the relationship between market share and profitability. Figure A4.9 illustrates three stages of profitability: (1) A small market share may be highly profitable by focusing on a limited number of products or customers, comparatively simple marketing, and low overhead costs. (2) As investment, production, and marketing costs increase with sales volume and market share, economies of
scale may not compensate for the increase in market share; in other words, marginal sales revenue may be lower than the increase in marginal cost of production, with attendant decrease in profitability. (3) A further increase in market share would provide greater profit margins as the cost advantages of economies of scale are realized, with consequent improvement in profitability.

Higher levels of market share may require inordinate expenditures for penetrating additional areas or segments or for greater marketing expenditures (advertising and sales effort) or consumer incentives (e.g., discounts, delivery, service), with diminishing profitability.

Geographic considerations. Markets should be addressed where prospects are most propitious. Some factors involved in identifying geographical areas relate to the degree of competition: international markets for consumer products that are served by well-established enterprises may present particular challenges. Within geographical areas, domestic and international, segments can be identified that may be underserved or for which the project is particularly competitive. A major consideration is transport and handling costs, as they affect pricing alternatives and profitability.

In conjunction with the project design process, strategic alternatives regarding geographical reach can be defined for particular products, considering local, regional, or national markets or export markets. Export can start with one or a few principal markets and gradually extend to other markets.

Internal factors. The objective of internal analysis is to discover what marketing strategy can be carried out most effectively considering characteristics of project personnel (or the existing enterprise in case of expansion), core
skills, and how cooperation with other entities might serve to supplement strengths and fortify areas of weakness. All operational areas are examined, including marketing, production, research and development, finance, personnel, management, and organization.

The corporate (project) culture, a reflection of the visions and aspirations of the sponsors, sets constraints upon design decisions and on behavior and actions of project staff inside and outside the organization. Some things sponsors are determined to do, and some they will not do, as reflected in project design and expectations for the organization and staff.

**Market segmentation** The market is seldom amorphous, so that for strategic purposes it is useful to divide it into segments, or population groups, whose needs and wants can be more specifically addressed. A segment is a group of potential consumers that can be isolated on the basis of behavior (particularly related to product preferences) and sociodemographic characteristics.

Segments can be demarcated by fairly uniform consumer behavior that is clearly distinct, with a size large enough to justify differentiation for the marketing approach. Some of the criteria for differentiation are geographic or linguistic (e.g., nationality, region, urban, or rural predominance), sociodemographic (e.g., age, sex, income, education, profession, size of household), and psychological (e.g., consumer resourcefulness, purpose, status). For industrial markets, enterprises can be differentiated on the basis of size (capitalization, number of employees) or industrial subsector.

**Marketing and the wider domain** The wider domain is the environment beyond the commercial setting in which the project is to function, and which affects commercial and distribution possibilities (see Chapter 1 and Figure 1.1) and the socioeconomic and ecological environments. Socioeconomic information is concerned with cultural factors of the population and quality of life factors and aspirations, general economic conditions, the political system (including legislation and regulations affecting the conduct of industry), societal goals (as expressed by public officials, community leaders, and in political platforms), aesthetics, and other values. Relevant elements of the ecological system at the project’s operational sites might be flora and fauna of the area, natural resources (e.g., water, minerals, sites of historical interest), and the physical environment (e.g., climate, geology).

The marketing strategy to be adopted should respond to the socioeconomic environment in which the project is to function, particularly those aspects that are germane to the project’s industrial subsector. The strategy needs to be compatible and consistent with the overall project or corporate strategy in terms of its responsiveness to socioeconomic conditions.
The marketing strategy can be affected by environmental protection measures related to impacts from the use and disposal of the product. There may be emission regulations and material constraints, such as the use of biodegradable substances in product and packaging or recycling requirements at local, regional, and national (even international) levels. The applicability and jurisdiction of legislation and regulatory agencies have to be taken into account. In some cases, life cycle pricing is mandated, whereby the manufacturer retains responsibility for the product from its production through ultimate disposal. Product designs that eliminate or mitigate direct impacts (whether or not regulated) may be a way of appealing to consumers aware of environmental issues.

Technology can be a constraint on the application of marketing variables. An established production technology often sets a quality standard that must be respected. Once consumers have been acclimated to improved product quality, the trend is not easily reversible. Considering less polluting technology alternatives might advance acceptance of the product. A technology producing a quality commensurate with a large low-end market might be viable if the cost structure is compatible with a low-price strategy.

Government industrial policy includes incentives, quotas, and protection. Strategic policies of the government may be relevant as they affect the project’s subsector, the general business environment, macroeconomic status and policies, and fiscal (liberal or conservative), monetary (tightening or relaxing), and foreign trade policies (export-import financing by the banking system, import quotas and other protective barriers, export-import duties, promotion facilities). Entry-exit barriers to participation in the sector, restrictions on foreign participation, policy on repatriation of earnings, and exchange controls may affect the design of a marketing strategy. For example, the existence of exchange controls (usually resulting in currency overvaluation) may make it difficult for the project to export.

Some dimensions of the wider domain are perhaps more relevant to the overall project strategy rather than market strategy per se. However, they are inextricably linked. The nature of the political process and power transitions, stability of the political system, the legal framework for industrial transactions, protection of intellectual property, efficiency of legal processes, degree of variability in application of laws and judicial processes, transparency, and antitrust legislation can all have an impact on the market approach. Consider, for example, protection of intellectual property. A marketing system can be classified as intellectual property (copyright), for example, when part of a franchising package. If property rights are not respected, licensors might be reluctant to authorize a franchise in such a market.

Social and cultural norms impose constraints on marketing approaches. The use of marketing variables in ways that are consistent with social
standards can be a positive influence on prospects for success. Conversely, breaking the standards can be highly detrimental. Some marketing approaches border on the objectionable as a way of attracting attention without going over the line. Skillful practitioners of the promotion arts have devised approaches that alter social standards, gaining the allegiance of consumers in the process.

**Strategic Options**

An approach to the market can be developed by applying fairly well-established strategic concepts, adapted to the specific conditions in which the project is expected to function. These basic strategies can be employed as is but are presented also to stimulate ideas. It is prudent to consider alternatives, if only to shed light on the merits and perils of a particular approach. It is also possible that a combination of approaches, perhaps with regard to segments or geographical areas, will prove to be most effective.

*Cost advantage:* A cost structure lower than competitors’ based on production efficiencies or lower distribution costs permits price competitiveness as a means of capturing market share. With lower costs, aggressive pricing can be employed in regard to products with features equivalent to those of competitors.

*Differentiation:* The idea is to appeal to specific segments by stressing the product’s uniqueness in, for example, operating features, appearance, size, or service. The approach is most applicable to discretionary products and to a lesser extent for basics.

*Market niche:* Based on the presumption that focusing on a very limited portion of the market (a group of buyers, parts of the product line, or a geographically limited area) is more effective than operating in the broad field of competition, generally associated with a high price structure.

*Competition:* Attempts to capture market share of competitors; it is appropriate if the product is at or near the market maturity or saturation phase of the product cycle. Alternative competitive approaches can be employed: aggressive pricing, imitation (perhaps benefiting from competitors’ marketing), image (quality, performance, service, brand identification).

*Expansion:* Requires either creation of a new market or enlargement of existing market volume. A principal project aim in adopting this type of strategy is to gain advantage over competition during the early phases of expansion. The marketing mix can be selected for
attracting new consumer groups or intensifying consumption within existing consumer groups poorly represented in the market place. The project would have to improve or expand distribution channels.

Diversification: An option for an existing enterprise in approaching either or both existing clients and new markets with new products.

Market penetration: Applicable for an old product in an existing market, for which the project will seek to gain share. Intense marketing is usually required. A variation is essentially reintroducing the product in a new format (e.g., promotion or packaging).

Market development: The project may seek new geographical areas, new customer segments, or increasing sales through new distribution channels for an existing product in a new market; potential new consumers have to be made aware of the product and its features.

Product development: For an existing enterprise, a new product is introduced to its existing markets, seeking to introduce new product solutions for its existing customer base or new clients.

Export Market Strategy

The level and pace of economic development in target countries are determinants of export potential. Transportation and handling costs are a decisive factor, dependent on location or other factors in regard to transportation routes. Transportation and handling costs can differ widely based upon the availability of transport media and the domestic price structure for handling and transport facilities.

Importing countries or firms may adopt quality requirements based upon their own abilities and marketing programs. The project has a great advantage if it can offer products with quality standards that exceed local standards, particularly if consumers regard the local product unfavorably. Marketers in the importing countries often promote products on the basis of their foreign origin, particularly when local products have poor acceptance by consumers. The product may have to adhere to international or domestic material and safety standards. These requirements may be imposed by regulation or statute in the importing country or by commonly accepted requirements of consumers.

Prices and qualities in international markets are determinants of export potential for the project. A starting point may be trade statistics and other

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6Information is available from international trade organizations such as GATT—General Agreement on Tariffs and Trade; ITC—International Trade Center; and WTO—World Trade Organization.
information on the targeted export market, such as CIF price and inland charges, product characteristics, and sources of supply. If export markets are in a phase of steep growth or decline, close attention to the economic situation may be warranted. For markets that are well established, marketing and distribution channels may be of greater concern.

The international market for consumer products is highly competitive. However, if the product can compete in terms of price and quality, the global market can be approached incrementally. For the project design, export market analysis can include principal markets to be penetrated initially, which may be gradually extended to other countries as plant capacity is expanded to meet increased market demand. International competitiveness is enhanced with economies of scale in production or marketing and through location advantages, international cooperation, and access to advanced technologies. Impediments are high transportation and warehouse costs, sensitivity to terms of delivery, and trade barriers, such as import restrictions, foreign exchange control, and stringent individual market’s international standards that are difficult to meet.

There may be strategic advantages in operating internationally: economies of scale in production, access to markets oriented to consumption of the product. Utilizing existing distribution channels and local promotion agencies offers security in unfamiliar terrain.

Any of the strategic approaches discussed in this section can be applied to the export market. If the competition strategy is adopted, a major issue is how to set up distribution channels that are reliable and for which the price buildup permits an ex-factory price compatible with production costs.

International competitiveness for the project is measured by the amount of domestic resources per unit of foreign exchange generated. If the project

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7 The product should be internationally competitive from the economic perspective as well; see Economic Analysis – International competitiveness.

8 The plant capacity should be designed to accommodate planned exports for the principal markets identified, but the design should also include possibilities for expansion if export markets develop as contemplated.

9 Except for small projects designed solely for local markets, there is a close interaction between domestic and foreign manufacture. Domestic products are frequently in competition with imported products except in countries imposing severe import controls. Even with controls, the price, quality, and delivery of equivalent imported products has a considerable impact on the price and quality of domestic products. In some countries, a direct relationship between the domestic and import price is mandated; for example, domestically manufactured products have to sell at a percentage (approximately 20–25 percent) below equivalent imported products. Even for public-sector projects, product pricing is sometimes related to the pricing of comparable imported products.
is competitive, penetrating the export market can be accomplished with ag-
gressive pricing or other incentives. Then the market can be secured with
defensive measures such as warranties and service. One of the main de-
terminants of international competitiveness is transportation and handling
costs, which are bound to increase in importance with diminishing fossil fuel
supplies.

Alternative channel structures are shown in Figure A4.10. The project
ordinarily delivers its products to an importer or wholesaler in the importing
country. Depending upon the size of the dealer and the magnitude of its share
of the local consumer and industrial markets, the dealer may sell directly to
an original equipment manufacturer (OEM)\(^\text{10}\) or to an intermediary who
services retailers and small manufacturers. End users and very large retailers
can be serviced through the importer or in some cases directly by the project.
Knowledge of the channel structure is also useful for estimating the price
buildup from factory gate to ultimate consumer, including all markups and
transportation and handling costs.

**Strategy and Product Life Cycle**

The position in the product life cycle (see Figure A4.3) is a factor to consider
in the selection of the marketing strategy.

*Start-up and growth:* The project tries to capture the share of the ex-
panding market with aggressive promotion involving product differentiation
or services. A phased expansion of capacity (and investment) synchronized
with anticipated growth in the market might be considered.

\(^{10}\) Original equipment manufacturers (OEMs) produce capital equipment primarily
for industrial markets.
Market Research and Marketing

**Maturity**: As the market ages, growth slows, and profits tend to decline. Intensive promotional efforts are employed to capture market share, perhaps through a pricing strategy combined with more efficient production technology. Market segments are identified whose needs and wants have not been addressed. Planning periodic discounting might be appropriate, or innovative product features introduced (e.g., baking soda and peroxide in toothpaste). Promotion is oriented toward instilling brand loyalty as a means of retaining market share.

**Saturation or decline**: Faced with a stagnant or declining customer base, the project has to seek to maintain profitability by increasing market share to compensate for decreased profitability. Productivity improvement over the competition (economy of scale or alternative technology with cost advantages that would permit an aggressive pricing strategy) is a possibility, but large capital expenditures are to be avoided in this environment. Some innovative aspect of the new production or brand or trademark identification from other corporate activity or licensing could capture sufficient market share to make the enterprise worthwhile. The project can appeal to specialized markets or develop new applications for the product. For example, one of the major skin care products in the United States was promoted as an insect repellant. Brand identification can be employed if this is an expansion of an existing, well-established company or if the brand identification can be secured through licensing. If none of these are possible, it makes no sense to enter the business. Better to seek another project.

**Marketing Variables—5 P’s**

The marketing mix is the set of *marketing tools* or *marketing instruments* (their structures and related activities) selected to implement the strategy, which are built around the application of marketing variables. Marketing tools are the instruments of interaction between the project and other market participants, such as consumers, intermediaries, agents, and traders. The tools are applied via media (print, broadcast, telecommunications, Internet, outdoor advertising) and by direct contact with potential consumers. Some examples are Internet web sites, social marketing, direct mailing, brochures, and press releases. Each type of strategy (see “Strategic Options”) requires a particular set of marketing tools for implementation. For example, a strategy based on cost advantage would use tools that are different from a differentiation strategy for the same market.

The controllable elements of the marketing strategy are commonly identified as the four P’s: product (or presentation), price, place (distribution), and promotion. A fifth P, people, is added to emphasize the consumer orientation that is fundamental to developing an effective strategy. These
TABLE A4.1  Marketing Variables

<table>
<thead>
<tr>
<th>Product (presentation)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>Price positioning</td>
</tr>
<tr>
<td>Design</td>
<td>Discounts</td>
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<td>Brand, trademark</td>
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Elements are employed in the design of marketing instruments adjusted until a combination is found that serves the needs of the project’s potential consumers. Components (or elements) of these variables are shown in Table A4.1.

Figure A4.11 illustrates the relationship between the consumer, the project marketing system, and the business environment. The focus of attention is on the consumer, whose needs and preferences, and how they can be satisfied, are of primary concern for deciding upon the product and marketing approach. The marketing environment is comprised of elements of the project’s internal features and external conditions. The marketing strategy involves the application of internal marketing variables nominally under the control of the project (and other internal corporate features) and accommodation and synergies with features of the external environment.

**People, the (sometimes forgotten) P**  The marketing effort is fundamentally aimed at people, individual consumers, intermediaries such as wholesalers and traders, or corporate procurement personnel. The desire or intention to use the product is motivated by needs satisfied by its core utility (its function) and its psychological appeal. When fundamental and psychological needs and wants of potential users are understood, a strategy can be
devised to satisfy them. The appeal might focus on unique or advantageous product features not offered by competition.

Consumers may prefer to buy directly from the producer on the basis of perceived assurance of product quality and price; some electronic product manufacturers, for example, have successfully marketed with this direct approach. Price-conscious consumer segments are sometimes willing to sacrifice service for price. Formerly, some durable products manufacturers sold only through specialty outlets featuring service but switched over to large discount outlets to gain market share or to follow competitors. Consumers are increasingly attracted to electronic media (e.g., the Internet). The range of products that can be marketed in this way is practically limitless. Instruments are combined for consumer convenience. Internet sales are ordinarily consummated on the project’s web site and delivered via one of public or private shipping media that cover the globe. As another example, private internet service providers (ISPs) sell installation and access packs through several retail outlets (including booksellers), making it easy for potential customers to receive the materials necessary to set up access.

Characteristics of consumers are further discussed in “Domestic Consumers” and “Export Markets.”
Product  Products (goods and services) are generally classified as consumer, intermediates (producer), and machinery and equipment (see “Product Classifications”), defined by design specifications (configuration, materials and standards, production and assembly, maintenance requirements), performance standards, function, or use. The product or product line should address the needs and wants of potential consumers, with possible variations for market segments. Product performance features provide information for the market and also serve as a design guide.

Reference to international or national quality and performance standards is a good way to instill consumer confidence, for example, the International Standard Organization (ISO) or American Society for Testing Materials (ASTM).

Product design is an integral component of the marketing strategy. Uniqueness is an important consideration for strategic purposes. Differentiation of the product from those currently offered in the market helps to distinguish it from those of competitors and can be effected through product, packaging, or distribution. Product differentiation might be tangible (configuration, texture, color) or intangible (association of the product with special performance features or lifestyle).

Innovative products serve consumers in ways that they have not been previously served. For example, the change in computer operating system from disk operating system to graphical user interface was an innovation for computer users that had an explosive effect on demand for this type of product.

Compliance with rigorous national product standards and regulations can be employed for promotional purposes, especially if the product meets international standards.

Product mix  A product mix is the set of all product lines or items that the project proposes to manufacture. For example, an agro-based industrial complex could include both sugar and alcohol (product lines, each a group of closely related products) in its production program. Sugar can be produced in more than one form: crystals, cubes, and powder. There are several types of alcohol, potable and industrial, produced from molasses, a by-product of sugar production. Sugar in various forms and the types of alcohol together constitute the product mix. The product line may respond to the wants or needs of different market segments of one or more product classifications (e.g., consumer and producer markets).

Alternatives for the product mix involve breadth (number of product lines), depth (number of variants in a given product line), and consistency (extent of relationship among the product lines). The relationship can be
based upon the use of common production facilities, common marketing channels, and similarity of end-user groups.

Integrated production processes tend to place greater limits on the range of products. For example, in the petrochemical industry, relative quantities of distillates can only vary within certain ranges. Where unit operations are not integrated, a wider variety of choices in regard to quantities of production are possible.

When there is little relationship among product lines, each line might require a different distribution network. Sugar is sold to food distributors or through supermarkets or grocery shops; industrial alcohol through specialized channels. The employment of more than one distribution channel could have cost implications and call for additional efforts to manage the channels.

A project proposing to operate in different market segments and product lines responding to different needs may have to adopt varied promotional strategies. For example, in the sugar product line, the message and the medium for promoting molasses is different from that of crystal sugar. Each product line could target market segments with different levels of sensitivity to price, requiring the development of pricing strategies appropriate for each.

Breadth of the product line affects the quantity of raw materials and intermediates to be included in inventories. The task of inventory management becomes more complex, and inventory carrying costs increase with increasing breadth. In industrial machinery, for example, there are a variety of capacities demanded, each with its inventory requirement.

Diversification spreads risk. When the project plans more than one product line, the effect is to diminish somewhat the risk for the enterprise. If production and sale of one of a number of products or lines of products can keep the enterprise at or above the break-even level, the risk for the enterprise is reduced. The share of sales and profit for each product is one of the key factors influencing product mix decisions.

In formulating the marketing strategy, the contribution (sales revenue less variable cost) of each product in the mix should be estimated. Those with highest contribution could be the focus of attention, but factors other than financial may be of equal or greater importance, for example, breadth and depth of the mix, quality, and service features.

Determining the product mix may go through several iterations. Once a product mix is selected, opportunities to add to the mix might become apparent, such as if distribution channels for a proposed product could be used for some other product with low incremental cost. A project proposing to manufacture a domestic washing machine might consider adding a clothes dryer, targeting the same market segment and distributing through the same channels.
Brands and trademarks  The project may decide to establish its own brand or trademark or to produce generic products with brand identification in the hands of domestic or foreign wholesalers, distributors, or retailers or even other producers. The decision is perhaps more significant for products to be sold to consumers, who are accustomed to identifying brand names with product characteristics (e.g., quality, performance, price). Establishing a brand name is usually cost-intensive but may result in effective differentiation.

The decision on adopting a distinguishing brand name or trademark depends on cultural aspects of the marketing climate, whether it is possible to establish brand loyalty by marketing under a new brand or trademark or under that of another domestic or foreign entity. An international brand name can be an effective marketing tool. The project can purchase rights to produce and market by license, perhaps securing exclusive use in the region or country. In most circumstances, the project would have to adhere to the quality and production standards of the licensor. The cost of licensing and meeting international standards has to be weighed against the possible reduced market potential in its absence. This approach could save considerable resources that otherwise would be invested to establish a brand identity.

Product liability provisions of the laws and regulations of the country should be examined to understand the consequences in regard to using the licensor’s or the project’s own trademark or brand name. In some cases, international trade agreements permit production without consent of the owner of intellectual property (e.g., patents or designs), particularly in case of national emergency (e.g., production of patented pharmaceuticals during an outbreak of epidemic disease).

Ultimately, the decision with regard to brand name rests on anticipated consumer reaction. Establishing a brand name is not without cost, but if it is expected to enhance consumer loyalty, then perhaps it is worth the effort. There are risks as well. If one product in the line turns out to be unsatisfactory, it could affect prospects for the rest of the line.

Packaging  The choice of packaging is a function of the market and physical characteristics (e.g., size, weight, volume). Some packaging is used for promotion as well as protection, while other packaging is utilitarian.

Packaging can have one or both functions of protection (during handling, transport, and distribution) and promotion. Packaging for producer products (raw materials or intermediate products) tends to be more utilitarian as the clients are generally aware of the product’s characteristics and are not likely to be swayed by outward appearances. Even in this case, however, attractive packaging that delivers a message of quality and reliability can
be beneficial. Packaging for consumer products can respond to consumer preferences and also to promotional needs. In regard to protection during handling up to the end user, packaging must maintain the product integrity and quality under all of the handling and storage conditions to be encountered. Trade-offs among protection, consumer appeal, and the costs of losses in handling and transport should be considered.

Packaging designs will increasingly have to take into account methods of disposal. Consumers are faced with added costs for packaging that cannot be recycled or reused without disposal in landfills or into the atmosphere or bodies of water. Packaging choices that avoid these problems can improve product acceptability. Biodegradability of packaging materials is another consideration. Statutes or regulations, for instance, on handling of hazardous materials, may cover some packaging-related environmental issues. There may be statutory packaging requirements that must be observed in the market, such as printed information for consumers like date of expiration, date of manufacture, or batch number.

**Price**  Almost every market has an existing structure of prices determined by the interplay of supply and demand. Either the prevailing price structure or a price-oriented marketing approach can be employed.

Historical data on prices of outputs and inputs can be analyzed statistically for trend, cyclical patterns, statistical deviation and variance, averages, minimums, and maximums. Extrapolations on historical price information can be very misleading if the industry is in a dynamic stage. In any case, extrapolations should not extend to time periods much greater than the time span of available data. If the data cover a period of inflation, prices in each period have to be adjusted by the appropriate deflator for purposes of comparison.

In fact, historical trends are not the most reliable basis for price projections. Better to identify forces driving prices upward or downward and assess their impact on prices. Seeking expert opinion may be justified if price variations are great or if market conditions indicate that sharp changes may be in the offing.

Pricing decisions may be based upon the existing structure or on a price-oriented strategy. They can be related to enterprise objectives, production cost, competitors, identified market segments and the consumer profiles, or relationships between price and demand.

In the classical view, demand decreases as price increases. For basic commodities, perhaps the classical model serves, but for other products the situation is more complex. Serving the needs of a large middle class with a reliable and moderately priced product will likely draw a lot of competition.
and make it difficult to capture market share. On the other hand, the low and high ends of the market may be less competitive. High-priced alternatives are not so competitive for several reasons: smaller market, less concern for price (in fact, a high price is sometimes competitively advantageous), and quality and skills issues that are more problematic for producers. Low margins are usually a problem at the low end.

For promotional purposes, discounts can be offered during the product introduction period or price breaks based on order quantity. Delivery terms (shipping mode and costs, packaging, insurance) and payment (credit, on order, C.O.D.) can also be employed for promotional purposes.

**Approaches to pricing decisions** Pricing decisions have to be consistent with what consumers are willing to pay, based on their perceptions of value, real or perceived. Price may also be affected by competitive offerings in the market. However, within these constraints, there are a number of bases upon which pricing decisions can be predicated.

**Demand-based:** When demand is high and supply is constrained (a sellers’ market), the pricing decision may be predicated on taking advantage of demand-supply relationships. The equilibrium price will not be relevant; for a period of time determined by the nature of the supply constraint, when the product is new or novel, consumers are willing to pay the demand price.

**Aggressive penetration:** This approach is a strategy for rapidly securing market share and for increasing the level of demand when the project’s planned output is a significant portion of the total market. To capture a large market share, the product is priced lower than competition so that potential customers are encouraged to buy. Intense promotion is generally required. It works best when the project has high economies of scale.

**Slow penetration:** Pricing is similar to aggressive penetration but is relevant when profit margins are low so that aggressive marketing costs would be precluded.

**Psychological:** In one approach, the so-called official price is set artificially high and discounted to give the impression of a good deal for the consumer. A relatively high price might be associated with high quality. One approach takes advantage of the belief that prices ending in uneven rather than even numbers (e.g., $19.99, $1,999) are a better deal than even numbers (e.g., $10 or $200,000). However, a price ending in an odd number is often associated with low
quality. Another approach is reference pricing: setting the price in accordance with consumers’ views of a price relationship to a high value or luxury product to provide the impression that the project’s offering is in the same category.

**Targeted:** Pricing can differ by market segment or region, depending on specific consumer characteristics; prices are set according to varying willingness or ability to pay, depending upon the general level of wealth and income. In some industries in developing countries, such as tourism, prices for expatriates are higher than for local citizens. Favorable prices may be offered to maintain the loyalty of major clients, including quantity price breaks. Prices for a portion of the product line can be set artificially low to attract clients to the entire product line.

**Cost-based:** Although the product has to stand the test of the market, in line with what customers are willing to pay, within that constraint the price can be based on the desired contribution (price-variable cost) and profit, at some margin above cost. The contribution is not necessarily constant over all levels of production (nonlinear variable cost). To estimate profitability, the fixed cost burden per unit of production, which is also dependent on the level of production, is deducted, so the average contribution and fixed cost to the planning horizon can be employed for this purpose.

**Buyer-based:** The buyer may dictate the price, particularly if the number of clients is limited. For industrial production, buyers have their own cost structures and profitability requirements that often fix maximum amounts that they are willing or able to pay, according to their criteria. Consumers similarly are constrained in some cases by disposable income that can be allocated to certain purposes. Consumer segments vary in the degree of price consciousness or concern. Some segments are extremely price sensitive, both in terms of low and high prices. For luxury products, a low price can be a deterrent to consumption.

**Competitor-based:** The competitor’s price is often a benchmark for the pricing decision. However, it is likely that competitors’ operating costs are low enough to justify their current prices. Profitability is enhanced when the project’s productivity is greater than that of the competitors, and diminished when it is lower. This strategy should also take into account possible reactions of competitors to the project’s entry to the market. If the competitor is able to reduce sales prices to protect its market share, current prices may not be an adequate basis for projection of sales revenues.
**Channel price buildup:** Analysis of markups along the distribution channel can provide an indication of an appropriate ex-factory price. Starting from the consumer price, the markups at each level in the channel, taking into account both costs of handling and distribution and profit margins, can establish the maximum ex-factory price. An example of channel price buildup is contained on this web site in the Cambria Yarns Project, Price Policy.

**Statutory or regulatory basis:** Legislative or administrative authority in some industries, such as utilities, regulates price. The goal of the project could be to lower operating costs or to expand the customer base by addressing the needs of market segments or regions presently not being served.

**Breakeven analysis:** The pricing decision can be predicated on the price-demand relationship that will yield the highest profit, but that is possible only if the project is a major influence on market prices, a situation that would not prevail when there is considerable or aggressive competition. An example is illustrated in Figure A4.12. Variable cost of production (VC) is 30 (per unit). Fixed cost (FC) for the project amounts to 250. Expected sales for four price levels are shown in Table A4.2.

Quantity sold (Q) at each price (p) is determined from a demand-price relationship. Revenue (R) at each price is Q multiplied by p. The contribution (c) at each price level is the difference between p and vc (c = p – vc). The breakeven point (BEP), in terms of units, is determined by dividing the FC by c. The total cost (TC) at each price level is FC (250) plus the product of vc and Q. Profit is R – TC.

In Figure A4.12, the expected revenue R is shown on the revenue line for each price. The profit is the difference between expected revenue R and

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<td>(1) Unit Price, p</td>
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total cost $TC$. In this example, as seen Table A4.2, the optimal price is 100 (profit is a maximum of 100).

**Promotion** Knowledge of availability and features of the product has to be conveyed to potential consumers to make them aware and to stimulate their interest. Promotion is virtually essential for entering and maintaining a position in the market.\(^{11}\)

The existing structure of product promotion is related in part to the configuration of existing distribution channels; intermediaries taking part in promotion and the use of media by competitors are identified and their roles defined: types, message concepts, intensity, reach, and also successful approaches that might not be directly relevant to the project, but adaptable for its purposes.

Availability and costs of promotion professionals and their history of accomplishments and political or regulatory constraints on media access or promotional approaches are factors to consider.

Analysis is directed toward seeking the combination of intermediaries, media alternatives, and other promotion instruments that provide the necessary dissemination of information and projection of the project’s messages at least cost. Promotion decisions may be predicated on the existing external promotion structure or, if the existing structure is inadequate or otherwise unacceptable, on an alternative approach devised by the analyst.

\(^{11}\) “While advertising offers a reason to buy, sales promotion offers an incentive to buy” (Kotler, *Marketing Management*, 1998.)
Some of the tools that can be employed as part of the promotion mix:

Advertising: to stimulate or create demand and appeal of the project’s output; almost all advertising is commissioned through specialized agencies, which design the advertisement and select proper media; promotion through advertising media is a principal method for stimulating or creating demand and market share (see “Media and Message”).

Public relations: reaching and influencing people and institutions (e.g., government planning agencies, media) to support the project.

Sales promotion or merchandising: an instrument to support agents, particularly retailers.

Trade shows and expositions: for launching and promoting at well-publicized events; demonstrations of the product, perhaps samples or trial applications, can be offered to potential consumers.

Free or no-risk trials: a powerful promotional strategy; no-risk offers consumer satisfaction or money-back guarantee.

Lobbying: politicians and administrative organizations can be fertile grounds for product promotion, particularly when there is some concern for safety or other health hazard related to use of the product; an example is the fire alarm industry, where local government bodies successfully lobbied to make use of the product mandatory in some areas.

Warranty: an agreement by the producer to repair or replace the product within a defined time period if it degrades or becomes otherwise unserviceable; consumers seek protection against damage or premature degradation of product acquisitions; the warranty policy can be based, as a starting point, upon extant industry practices and the value that the potential consumers place on the warranty (perhaps determined from an assessment exercise); costs for providing replacements for defective products have to be included in the project plan.

After-sales service: an effective technical service program providing easy access to information or assistance in solving product-related problems; services may include supply of spare parts to extensive maintenance and repair services; particularly relevant for producer products and consumer durables as services to these clients can enhance prospects for market penetration and survival in the face of intense competition; usually requires a service network to be set up during
Market Research and Marketing

![Designing the Promotion Program Diagram](image)

**FIGURE A4.13** Designing the Promotion Program

the implementation phase and maintained during operations, either by the project or specialized maintenance organizations.  

Public relations (PR): a means of influencing opinions within the larger market system of customers, suppliers, trade channels, and all those whose actions and opinions are likely to have an impact on the achievement of the project’s objectives, rather than directly contributing to sales; information is offered about the company, such as corporate communications and sponsorship of public events, with the intention of gaining the admiration and loyalty of clients, distributors and agents, and politicians and other public officials.

In planning the use of promotional tools, the audience may include potential customers, local communities, suppliers, and officials of industrial regulatory and promotion institutions (public and private). The process is illustrated in Figure A4.13. The target audience is identified; market segments may require differing approaches. Objectives, that is, desired outcomes, can further be refined into subobjectives, such as changing consumer attitudes or influencing consumers to behave in some manner. The message is communicated through a mix of promotion instruments (media and other activities).

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12 Unit operations that produce parts that need frequent replacement should be designed to reflect this part of sales. Production facilities or other sources of consumable components have to be included in the project design.
The tentative promotional budget can be estimated and refined through one or more iterations involving impacts versus costs.

**Message and media** The project design may include plans for radio, television, and electronic (Internet) sites and newspapers. Other printed media can be employed, such as circulars (handouts) distributed either through the mail, at concentration points for potential consumers, or in telephone books. The Worldwide Web can be an effective means for promoting almost any type of product. The project can set up a web page for this purpose.

**The message** Once the target market is identified, there are logical steps to formulating the promotional message. The first is to identify problems that potential consumers seek to solve: what are they trying to achieve. The next is to offer solutions to problems: how the product will help consumers to achieve their objectives and goals. It helps to be able to tell potential consumers how the product has served others. Finally, how the product is differentiated is important: what are its characteristics that make it superior to competition in regard to meeting the needs and enhancing the lives of potential consumers.

The message theme can be anywhere in the spectrum from strictly informational to a purely psychological appeal. The latter may contain virtually nothing about the product per se but is rather directed toward emotional needs that can be explained, to some extent, by A. H. Maslow’s hierarchy of human needs, which he arranged in a pyramid, starting from the most basic to the highest. He proposed that for an individual to attend to higher needs, lower needs would have to be largely satisfied. He organized them as follows: physiological (shelter, air and water, food, sex, homeostasis), safety (protection from physical and emotional harm), love and belonging (supportive social interactions, associations), esteem (self-esteem, esteem in the eyes of others, self-respect, self-confidence), and self-actualization (making the most of one’s talents and capacities). The marketing message can be designed to address the satisfaction of needs according to the emotional status of the target population. In some cases, a multifaceted message would be appropriate, combining appeals at more than a single level. For example, large numbers of middle-class consumers in developed countries focus on esteem; they seek recognition and status, which is a sensible basis for formulating the message. This would not work very well as the sole basis for the message to low-income people, who are interested mainly in satisfying basic

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requirements, but they might respond favorably to a secondary portion of the message linking product use with safety or prestige.

Media  Media are the means of conveying marketing, promotional, and selling information to potential consumers. Mass media options are broadcast, print, Internet, and outdoor advertising (billboard). Direct or people-to-people alternatives include direct mail, telemarketing, community outreach, demonstrations at point of sale (e.g., retail outlets, expos, and fairs), and direct selling.

Television provides worldwide reach (and also local stations) through satellite but is relatively expensive. Radio is generally more localized than TV, less expensive, and suitable for more targeted messaging. Cable TV has more local programming than satellite, has less reach, but is also less expensive.

Print media include newspapers, local and national, with the possibility of targeting local, regional, or national markets, depending on the scope of their distribution (although web sites offer access to wider readership). Periodicals and journals are vehicles generally applicable for high-end products or for specialized professional groups. Brochures and newsletters can be distributed at public meeting places and transportation hubs.

The Internet provides opportunities for global reach at relatively low cost. The project can set up its own web site with promotional, marketing, and selling information, as well as serving as a platform for direct sales. It is also a means of building a consumer database, as customers provide personal information during sales transactions or surveys. E-mail marketing requires a mailing list, which can be generated from web site responses and also from agencies specializing in their collection for targeted consumer groups. E-commerce for generic products can best be carried out through a number of organizations that mass-market a wide array of products via the Internet. Search engines are another platform that can be used for promotional or marketing purposes, with massive numbers of users on a daily basis (e.g., Google, Yahoo).

Social media marketing employs a number of platforms (see “Advertising and Promotion”) to disseminate marketing and sales information. Social media marketing programs usually center on efforts to create content that attracts attention and encourages readers to share it with their social networks. A corporate message spreads from user to user and presumably resonates because it is coming from a trusted source, as opposed to the brand or company itself. Other social media tools include forums, groups, blogs (a type of web site maintained by an individual for topics of special interest), and wikis (another type of web site for creating and editing linked web pages).
The promotion and marketing effort can also include more direct media. Mail campaigns are suitable for some products; recipients are usually requested to take some action, either offering the product or directing recipients to some other action such as visiting a web site. Telemarketing is a means of contacting potential consumers to promote the product, to solicit sales, or to set up other channels of communication, such as web conferencing. For some products, a sales force is set up to contact potential consumers directly, either house-to-house or at special events set up for promotion and sales, with potential consumers lured with incentives. Promotional demonstrations can be set up at expos and fairs or through special TV programming.

**Distribution (Kotler’s Place)**  
Sales or distribution channels are the means for the project to deliver its output to consumers. Channels generally are specialized enterprises, agencies, or representatives, each employing its own marketing approaches, but some elements may have to be provided by the project if available components are inefficient or nonexistent. Channels are also lines of information between the project and consumers.

Distribution comprises the system and infrastructure for moving the product from plant to consumers. For existing products, there are normally well-established distribution channels. It is worth noting that interfering with existing distribution channels should be approached cautiously. Distribution channels are often strongly institutionalized. The physical attributes of the distribution channels should also be understood: capacities and qualities of transport media and warehousing.

The project has to seek the best means of transferring the product to consumers, at the place and time required, first considering the available channel structures (see Figure A4.6). Logistical aspects (physical distribution) are of primary importance in selecting or designing the channels: for example, delivery mechanisms (carriers, warehousing), transport time, inventory control, and channel security. The choice of distribution channels can have an impact on profitability: price buildup includes transport and handling costs, agents’ fees and commissions, and margins of intermediaries.

Channel features have to be consistent with the strategic framework. Major considerations are marketing, volume capacity, and cost. For low-price items, channels need the capacity to handle the traffic, and the cost must be compatible with the consumer price.

Selection of retail outlets is a function of the type of product: standard consumer products are generally sold through large retailers and luxury items at specialty shops and boutiques. Producer products (raw materials and components) are generally sold directly to downstream producers, although some products for small manufacturers are sold through specialty retailers and wholesalers.
The project can sell its product directly to end users, either through the project’s own retail outlets or through sales agents that take orders from buyers. In either case, the product moves directly from the project to consumer. This approach is applicable if there are few buyers and/or if they are located in a small geographical area. The project may sell directly to consumers spread over a wide geographical area through electronic media (e.g., Internet: see “Message and Media”) to facilitate closer interaction with customers and to minimize distribution costs. Other direct channels are house-to-house sales, whereby sales agents assume responsibilities for promotion or even packaging, telemarketing, and mail order.

Another approach is to sell the project output to wholesalers, who then assume responsibility for further distribution efforts and costs. The advantage is less complication for the project, but there is loss of control over marketing, promotion, and customer services. This approach may be selected when it is not feasible to manage a large number of retailers required to service a large number of potential customers who are geographically widespread.

Selling to retailers rather than wholesalers is more complicated as there are a larger number of points of sale, but there are advantages of cost and control. Franchising, or licensing the right to sell under the brand or trademark, is a way to maintain tight controls over the manner of merchandising. Producers specify virtually all aspects of the retailing operation: price, promotion, and retail processing.

For industries with small producers, traders may be involved in the chain. These are dealers who concentrate quantities from the small producers and then sell either to wholesalers or downstream processors.

Some channel components are inherently stronger than others, a factor that may affect pricing and other sales aspects. At the retail level, large retail outlets (box stores) discount prices to attract large numbers of customers. Their tight margins are a constraint on pricing and usually lead them to seek the lowest-cost producer, which is a major constraint on the production process selected for the project.

Each component in the distribution chain must be able to maintain the level of anticipated throughput. The weakest component, or link in the chain, defines the strength of the entire channel. Each link in the chain, including wholesalers, distributors, dealers, traders, and retailers that are part of the chain, must collectively be capable of handling the volume. Climatic conditions, cultural patterns, or other local conditions can affect the capacity of channel elements at each level.

Products with large volume or weight relative to value are usually constrained to surface modes of transportation. A combination of railroad and highway transport may be appropriate for distant markets. High-value products may be airfreighted, if the cost is consistent with the price structure,
although increasing fuel costs will undoubtedly limit the volume of this kind of traffic over the next few decades.

**Market Share and Penetration**

Market share is the ratio of the sale of project output to total sales of the product. A large market share carries the benefit of economies of scale and bargaining leverage with suppliers and distributors. In the mature phase of the product cycle, it is perhaps the only way to secure sufficient revenues to justify the project. It is also a way to improve the corporate image, which has the benefit of higher consumer and supplier loyalty. In some cases, the disadvantages of securing a large market share outweigh the benefits: in a saturated market, the promotional costs for attracting a large proportion of consumers may not be suitable in terms of investment and operating costs.

The product’s share of the market is influenced by consumer preferences and the marketing mix, that is, how other marketing variables are employed (see “Marketing Variables – 5 P’s), and the intensity of the promotional and distribution efforts. Preferences are affected by characteristics of the product, pricing, and type of promotion. The magnitude of the project voice (prominence in the promotional arena) is a function of the intensity of the promotion effort. The intensity of distribution is a function of the types and numbers of channels and the volume for each.

**Competitive Countermeasures**

Competition is the array of existing enterprises and prospective suppliers of project output, domestic and foreign. Virtually all industrial and commercial investment projects can expect some reaction from the competition, so it’s best to be prepared for it. The intensity of the reaction will usually be related to the degree that the competitor’s ox is being gored, but in some cases, the mere existence of an alternative for consumers is looked upon as a dire threat. However, competitive analysis in the business world is quite rare, more common for pricing than for market entry, new product, and advertising budgeting decisions.  

An effective marketing strategy takes into account competitors operating modes, intentions, and their strengths and weaknesses. Analysis can

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focus on important individual competitors or on groups displaying similar behavior. Factors are market share, market reach (geographical extent of market penetration), marketing strategy and program, and their dominance in the market.

The central issue is what measures can be expected from competitors under present circumstances, namely, without the project, and what countermeasures can be expected with the project operating. These are the fundamental questions:

What are their aims?
How do they currently behave?
How do they assess their own situation?
What are their strengths and weaknesses?

The normal behavior pattern is a reflection of their corporate culture and their objectives. How they would behave in the face of project competition would usually have to be assessed through analysis of their market position and past behavior patterns. Some role reversal may be necessary to understand how they would assess their own positions, taking into account their strengths and weaknesses.

Based upon the perceived threat, the reaction could be anywhere from nonexistent to highly aggressive. The questions are: Will the competitor react, and if so, what will be its reaction? What clues are available? Information about the competitor is a good start, what they say and what they do. What they say can be gleaned from published financial reports and public statements of corporate officials, web sites, and interviews with knowledgeable industry analysts. Their current strategies can better be deduced from their actions: promotional activities, investments (including mergers and acquisitions), amount expended and types of R&D, partnerships, and other forms of business cooperation.

What are possible reactions or retaliations?
There may be no reaction. In one case, Honda introduced a small motorcycle into the U.S. market without opposition because the competition apparently believed that there was not much of a market for it. It may also be that American manufacturers did not think they could compete in price and quality. The most obvious reaction is price, particularly from a strong and efficient producer that may even sell at or below cost to put pressure on the interloper. The competitor may launch an intensive marketing campaign, promoting the virtues of its product and the deficiencies of the project’s. They can try to form strategic alliances with existing enterprises to gain leverage in the market, anywhere from cooperation to acquisition. They can
try to differentiate their product through the use of marketing instruments or through technology innovation.

A method for assessing how competitors apply marketing variables (see Marketing Strategy for further discussion) relative to the project strategy is tabulated in the Appendix (Comparative Analysis of Competitors’ Marketing Mix), which can serve as a guide in designing the marketing strategy. The assessment with regard to marketing variables is applied to segments served by competitors, the target groups (segments), and the extent to which they are addressed. The relative assessment provides an idea of their special strengths and weaknesses in each segment they serve.

Higher intensity (strength) of competition in a subsector increases pressure on (operational) margins. The intensity of competition (see Figure A4.14) is a function of the strength of entry and exit barriers, the phase in the subsector life cycle, the pressure through substitute products, and the negotiating power of the buyers and suppliers.

Entry barriers prevent new competitors from entering the subsector. The risk of other competitors entering the market mainly depends on the reaction by established competitors and the height of entry barriers, for example, experience and size of established enterprises, strength of existing customer relations, franchises, legal protective barriers, and high investment. High exit barriers also intensify competition in a subsector and tend to reduce prices and margins. Exit barriers exist when high fixed costs force high capacity utilization and political conditions make it difficult to cut down on the size of the workforce.
The intensity of competition is highest when many enterprises compete for slowly growing, stagnating, or even shrinking sales, which may be affected by the phase in the life cycle.

Substitute products intensify competition, particularly if substitutes serve the identical function as the product. The product need not be identical; functions can be served by alternative designs or technology. Greater flexibility of buyers increases the pressure on profit margins in the subsector.

Negotiating power of buyers of project output and suppliers of inputs increases pressures on margins. For buyers, this occurs when markets are thin (few buyers) or when the quantity of products offered is large compared with demand. Suppliers’ negotiating power is increased when they are few and demand presses on supply.

MARKETING PLAN

The plan specifies how to carry out the marketing strategy, the organization of internal and external elements and responsibilities, and the activities and resources of each to achieve objectives and goals. Budgets for carrying out the marketing plan can be developed from information on activities necessary to carry it out, particularly in regard to the necessary resources: personnel, overheads, employment of media and communications.

Internal elements include the marketing staff and facilities; if media preparations are to be done in-house, personnel and equipment for these purposes would be necessary. External elements are required to handle (1) advertising and promotion and (2) distribution. The first involves media (advertising and promotion agencies) and media facilities. Elements of distribution channels include wholesalers, dealers, traders and retailers, and transportation media. The plan is part of the project design phase, to be set up during project implementation.

Advertising and Promotion

Disseminating product and corporate messages is usually assigned to specialized advertising and promotion agencies. Some in-house promotion can be done in the form of periodic press releases concerning corporate activities or information about enterprise leadership. For example, many business-oriented programs, particularly on television, interview executives, offering an opportunity to explain corporate status and plans to a wide audience. Advertising agencies handle the design of product messages and select the most effective media for target consumer segments.

Popular media are television and radio, print media, and outdoor advertising in some cases (billboards). Online advertising and promotion via the Internet and social networking media, with online platforms such as
Facebook, Twitter, MySpace, and Youtube, are used by people and organizations to share information very rapidly and with low cost. E-mail marketing is another option, but requires compilation of mailing lists that can be facilitated through a project (enterprise) web site in connection with an interactive promotion campaign.

Direct mail is another option but also requires a mailing list that can be obtained through agencies that specialize in this field. Targeted lists can be obtained for a variety of categories and parameters for consumers (e.g., residential addresses, high income, seniors, homeowners, families with children, apartment dwellers) and for businesses (SIC code, sales, business history, executive personnel, contacts).

**Distribution**

Elements of a distribution channel can include importers and exporters, transport media, dealers, wholesalers, and retailers. Wholesalers take possession of the product and assume responsibility for marketing and distribution to consumer outlets or retailers. Some wholesalers also maintain retail outlets. Retailers market the product directly to consumers.

Direct consignment or sale to retailers generally requires servicing a large number, with the advantage of more control by the project. Marketing through a limited number of dealers or wholesalers results in less control over marketing and distribution approaches. Availability of intermediaries, their infrastructure facilities, their image among potential customers, and the quality of their sales force are to be considered.

Responsibilities of intermediaries have to be assigned. A member of the channel might be willing to promote the product (recommending the product to customers) in return for relatively higher commissions, which would add to distribution costs. The intermediary may be willing to accept consignments (in exchange for higher commission), thereby reducing the warehousing problem for the producer.

Ultimately, all the necessary functions must be covered, but who does what can to some degree be decided by the project. Associated costs and benefits have to be identified and logical decisions made at the project formulation stage, keeping in view customer preferences, the reach, and other such factors.

When wide distribution of the product is planned, it may be prudent to set up servicing intermediaries in local areas rather than providing services at the plant. A selected number of dealers authorized to sell the product, located in some or all of the areas in which the product is to be distributed, can also service the product. These services may include technical advice, warranty replacements, and repairs. Decentralized service facilities tend to be more costly.
Market Research and Marketing

Marketing Organization

A marketing organization may be required, more assuredly for innovative products that require intensive promotion and marketing, and less so for basics. The organizational design should include both internal (positions, descriptions of responsibilities, structure, and compensation) and external elements (promotion and advertising agencies and distribution channel elements). Costs for setting up and maintaining the internal organization and the external elements are included in the financial analysis, taking into account setup and recurring components.

Marketing Instruments

Promotional devices and activities are designed to foster consumer loyalty to the product and to the enterprise with the ultimate objective of generating sales. Promotional efforts are directed toward various stages of purchase decisions, generating awareness among potential customers about the availability of product, its features and benefits, or otherwise attempting to influence them through psychological devices (see “Media and Message”). The idea is to inspire interest in using the product, coupled with a desire to acquire it, leading to the action of purchase transactions.

Promotional measures can be oriented to particular segments to effectively build the image of the enterprise. The image-building process is most likely to have long-term implications: access to capital markets, for example.

Long-term benefits can be derived from promotional efforts by building brand loyalty among potential customers. Setting up the promotional effort involves designs of instruments and establishing media connections. During the operational phase, media designs will often require updating or revision so that there may be recurring design costs. Media rental costs should be included as appropriate.

Sales methods are an outgrowth of the marketing plan. Personal selling can be carried out by having members of the sales force visit potential customers or by setting up one or more central display points where the product can be demonstrated or promoted to potential customers. Sales can be promoted through any of the media available for marketing (broadcast, Internet, telephone, print). Whatever means is selected, the costs of sales personnel and overhead should be included in cost estimates.

The network of after-sales and warranty services has to be set up and maintained. This may involve arrangements with distributors or service facilities. There are also costs of repairs and replacements covered under warranty.

The marketing plan of action and budget are derived from the configuration of the marketing program. As part of the general implementation
INVESTMENT PROJECT DESIGN

plan, a schedule describing activities and timing related to setting up the marketing and sales organizations and their operations should be prepared. The schedule (action plan) should include all activities and events necessary to bring the marketing and sales program to functional status. It also covers activities and events foreseen during the operations phase, potential problem areas, and sensitivity to contingencies and methods of risk avoidance.

Marketing Budget

Marketing costs are summarized in the marketing budget, which is required for the evaluation of the project and for controlling its operation and performance after implementation. Cost estimates are needed for the planning and implementation phase and for operations. Some may be one-time costs and others recurring.

The projection of marketing costs comprises all cost components included in the activities of the marketing plan. Depending on the scope of study and the depth of analysis, marketing costs may be projected for each product separately or for a group of products. For detailed analysis, marketing costs can be estimated for direct and indirect costs (for multiple products), fixed and variable costs (for break-even analysis), for domestic and foreign costs (to account for foreign exchange impacts), for cost or profit centers (if the project analysis is so structured), and for marketing overhead. One method is to estimate resources for each internal and external activity and then compile them into a total estimate of the quantities, prices, and timing of resources required.

Costs of distribution include packaging, handling, and transport to the point of sale. There may be costs for setting up channel elements and for setting up storage facilities at the customer site (e.g., bulk storage of combustibles or other chemicals).

SALES PLAN

An organization is needed to carry out the function of contacting customers to secure orders. Costs include personnel (wages and salaries, benefits, commissions), travel and accommodations, and supplies.

The projection of sales revenues is essentially an extension of market analysis, the marketing program, and the decision on plant capacity, as illustrated in Figure A4.1. Estimating sales revenue takes into account plant capacity, technology, a feasible production program, and alternative marketing strategies. In other words, the marketing plan, sales plan, plant capacity, and production program have to be mutually consistent. Sales revenues are projected to the planning horizon.
Sales tax is not usually a cost item for the project. Value-added tax and turnover tax may influence cash flows, as the timing of receipts and payments is a function of government policies and practices. In general, sales revenue is net of sales tax. Sales tax may be relevant for economic analysis, both in relation to value and distribution. In any case, when sales revenue data enter into financial and economic analysis, it should be clear if the values are on a gross or net revenue basis.

**PRODUCTION PROGRAM AND PLANT CAPACITY**

The decision on plant capacity and production program is intimately linked to the market analysis and marketing strategy adopted. Figure A4.15 is an illustration of the process. An estimate of demand derives from market analysis. Estimated market share and rate of market penetration is developed in conjunction with the marketing strategy to be employed and is the basis for estimating the sales program, quantities, and timing of products to be sold.

The sales program, coupled with technology issues of scale and timing, is the basis for determining plant capacity. Scale refers to the installed capacity of the plant. Timing defines the amount to be produced in each period and can be optimized dynamically (over time) considering the varying (over time)
costs of production and the cost of maintaining inventories. Inventory and capacity trade-offs lead to the selection of optimum capacity in terms of cost and satisfaction of the sales demands. The importance of this analysis cannot be overstated.

Once capacity is decided, the definitive production program can be determined. The production program and plant capacity are linked so that one cannot be decided without the other. Constraints on plant capacity (e.g., minimum or maximum economic size, standard capacities) may require one or more iterations of the process to arrive at the plant capacity and production program that best meet the objectives within constraints.

Undercapacity can result in lost sales or inordinately high production costs. Overcapacity represents idle capital. The production program and plant capacity should be determined by considering the sales projections in an iterative process that seeks to optimize the use of capital and the benefits to be derived for the project from satisfying the needs of the market.

Plant capacity and production program decisions should take into account the rate of market penetration and inefficiencies that can be expected in the early production stages as the enterprise goes through the learning curve. Production stages may vary in terms of the rate at which full capacity can be achieved; unit operations may vary in complexity and skills necessary to achieve maximum efficiency. Projects usually experience initial problems, such as technological, production (adjustments to feedstock, labor, and equipment), and commercial (e.g., sales growth and market penetration) difficulties, that constrain the rate at which full production capacity can be realized. Material availability may be foreseen as a constraint on production. Prudence and good planning require recognition that full production may not be practicable for most projects during the initial production operations.

**BIBLIOGRAPHY**


**APPENDIX: COMPARATIVE ANALYSIS OF COMPETITOR’S MARKETING MIX**

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¹Relative to project